THE KALEIDOSCOPE;

OR,

LITERARY AND SCIENTIFIC MIRROR.

"UTILE DULCI."

This familiar Miscellany, from which all religious and political matters are excluded, contains a variety of original and selected Articles; comprehending LITERATURE, CRITICISM, MEN and MANNERS, AMUSEMENT, elegant EXTRACTS, POETRY, ANECDOTES, BIOGRAPHY, METEOROLOGY, the DRAMA, ARTS and SCIENCES, WIT and SATIRE, FASHIONS, NATURAL HISTORY, &c. forming a handsome ANNUAL VOLUME, with an INDEX and TITLE-PAGE. *Persons in any part of the Kingdom may obtain this Work from London through their respective Booksellers.*

Vol. X.—No. 476 LIVERPOOL, TUESDAY, AUGUST 11, 1829. PRICE 3½d.

Natural History.

INTRODUCTORY REMARKS.

"To look from Nature up to Nature's God."

As the study of Natural History is one of the most interesting pursuits that can engage the attention of rational and contemplative creatures, our readers will, we trust, be pleased to hear that it is our intention to devote particular attention to this department of science in the present volume of the *Kaleidoscope*. We have ample materials for the purpose; and we shall also avail ourselves of the entertaining and instructive information which abounds in the works put forth by the Society for the Diffusion of Useful Knowledge, whose labours so eminently combine the *utile dulci*.

We shall commence our series with some interesting particulars respecting the carrier pigeons and migratory birds.

CARRIER PIGEONS.

There is no phenomenon in natural history more involved in obscurity than that exhibited by the carrier pigeon and other birds,—who can, by some unknown and mysterious means, explore their way to their homes and progeny, after having been removed from them for hundreds of miles. By some experiments recorded in the *Philosophical Transactions*, it appears that some of the migratory birds after having, as it is presumed, passed a great portion of the year in foreign countries, are in the habit of returning regularly, for successive seasons, to the identical farm-houses which they frequented when in England the preceding season.

Wonderful and inexplicable as this phenomenon is, the speed with which birds travel through the air is scarcely less surprising; and there is something so peculiarly interesting in the history of these birds that we think we shall render an acceptable service to our readers by devoting a column or two to the subject.

We shall commence with copying the following paragraph, which appeared about a fortnight since in the *Times* newspaper:—

"Wagers have been laid at Maëstricht, between some respectable merchants there, to a considerable amount, that pigeons taken from thence to London would, when let loose there, reach Maëstricht in six hours. Forty-two pigeons were brought over in the Attwood, steam-packet, on Thursday last, about noon, and were marked in the course of that day by a person connected with the Dutch embassy here, and yesterday morning, at twenty-six minutes past eight o'clock, the time agreed upon, they were let loose, and proceeded on their aërial voyage. The principal wager is for 10,000 guilders; and if any one of these pigeons arrives in six hours the wager is won. The distance is about 260 English miles, in a direct line over Ramsgate and Ostend."

The following account of the arrival of the birds is copied from the *Globe*:—

"The steam boat which arrived yesterday from Rotterdam, has brought the result of the Maëstricht wagers, the principal of which has been lost, though only by a few minutes, as one of the pigeons did arrive in six hours and a quarter from the time of leaving England, and this in spite of a continued heavy rain, which fell during the whole time. The minor wagers have been won, the second pigeon arriving in seven hours, the third in seven hours and ten minutes, the fourth in seven hours and a half, and in four days, more than twenty of the pigeons had reached Maëstricht. The experiment is an exceedingly interesting one, as illustrating the instincts of this remarkable bird, and a repetition of it is, it is said, shortly to take place. The first pigeon must have travelled, assuming that it took a straight line, at the rate of forty-five miles an hour.

The next article on the subject, which we shall transcribe, appeared in a Cornwall paper, in August, 1819, and is as follows:—

A letter from Brussels, dated July 17, says,—"Thirty-two pigeons, with the word *Antwerp* marked on their wings, have been sent to London, where they were let loose on the 11th of this month, at seven o'clock in the morning, after having their wings countermarked *London*. The same day towards noon, one of these faithful animals arrived at home, and obtained the first prize; a quarter of an hour later a second arrived, and obtained the second prize. The following day twelve others arrived, making fourteen in all. The prizes, which are very considerable, will be distributed to-morrow (Sunday) at Antwerp. It is not with any intention of establishing a correspondence between London and Antwerp, (as the Paris journals pretend) that those pigeons were sent to London, but merely for the pleasure of seeing them return."

We copy the following from Buffon's Natural History:—

"This species of pigeon, was originally bred at Bassora, an ancient city of Persia, and from thence transmitted to Europe; they are called carriers, from having been used to convey intelligence by letters, from one city to another. It is from their extraordinary attachment to the place of their nativity, and more especially where they have trained up their young, that these birds were employed in several countries as the most expeditious carriers. They are taken from where they are bred, to the place from whence they are to return with intelligence. The letter being gently tied under the wing, in such a manner as not to incommode the bird's flight, it is then set at liberty to return. The winged messenger no sooner finds itself at large, than its love for its native home influences all its motions. It immediately flies up to a considerable height, making an extensive circle, which having traversed two or three times, it then with great certainty and exactness, darts itself by some unknown intuitive principle towards its native spot, though at the distance of many miles, bringing its message to the person to whom it is directed. By what visible means they discover the place, or by what compass they are conducted in the right way, is equally mysterious and unknown, but is has been proved by experiment, that they will perform a journey of forty miles, in the space of one hour and a half, which is a degree of despatch three times greater than the swiftest four-footed animal can possibly perform. This method of sending despatches was in great vogue in the East, and particularly at Scanderoon, till very lately; as, according to Dr. Russell, the practice is now discontinued. It was used there on the arrival of a ship, to give the merchants at Aleppo a more expeditious notice than could be devised by any other means; and which, Father Anril says, they would do in three hours, notwithstanding the distance from Scanderoon to Aleppo is thirty leagues.

"Great attention was formerly paid to the training of these pigeons, in order to be sent from Governors in a besieged city to Generals that were coming to succour it; from Princes to their subjects, with the news of some victory, or any other important transaction.

"In the East they kept relays of these pigeons in constant readiness to carry expresses to all parts of the country. When the Governor of Damiata heard the news of the death of Orillo, he let fly a pigeon, under whose wing he had fastened a letter; this flew to Cairo, whence a second was despatched to another place, as was customary, so that the death of Orillo (Ariosto, canto 15) was made known to all Egypt in a few hours. But the simple use of them was known in very early times. Anacreon informs us, that he held a correspondence with his lovely Bathillus, by a dove. Tauriosthenes, by means of a pigeon, which he caused to be decked with purple, sent the news to his father, who lived in the isle of Ægina, of his victory in the Olympic games, on the very day he had gained it. When Modena was besieged, Brutus, within the walls, kept an uninterrupted correspondence with Hirtius without, and this by the assistance of pigeons, setting at nought every stratagem of the besieger, Antony, to stop these winged couriers. In the times of the Crusades, there are many instances of these birds being made useful in the service of war. Tasso relates one during the siege of Jerusalem; and Joinville another, during the crusade of St. Louis.

"In order to train a pigeon for this purpose, take a strong, full-fledged, young carrier, and convey it in a basket or bag, to some little distance from home, and there turn it loose; having repeated this two or three times, extending the distance every time, it may at length be taken ten, or twenty miles, and so on, till it will return from the most remote parts of the kingdom. If not practised when young, the best of them will fly but insecurely, and stand a great chance of being lost; it is also very necessary that the pigeon intended to be sent with the letter, should be kept in the dark, and without food for about eight hours, before it is let loose."

The next extract we shall make is from the *Encyclopedia Perthensis*:—

"These pigeons, though carried hood winked, twenty, thirty, or one hundred miles, will find their way in a very little time to the place where they were bred. They are trained to this service in Turkey and Persia; and are carried first, while young, short flights of half a mile, afterwards more, till at length they will return from the farthest part of the kingdom. Every Bashaw has a basket of these pigeons bred in the seraglio, which upon any emergent occasion, as an insurrection, or the like, he despatches, with letters braced under their wings, to the seraglio; which proves a more speedy method, as well as a more safe one, than any other; he sends out more than one pigeon, however, for fear of accidents. Lithgow assures us, that one of these birds will carry a letter from Babylon to Aleppo, which is thirty days journey, in forty-eight hours. In modern times, the most noted were the pigeons of Aleppo, which served as couriers at Alexandretta and Bagdad. But this use of them has been laid aside for the last thirty or forty years, because the Curd robbers killed the pigeons. The manner of sending advice by them was this: they took pairs which had young ones, and carried them on horseback to the place from whence they wished them to return, taking care to let them have a full view. When the news arrived, the correspondent tied a billet to the pigeons' foot, and let her loose. The bird, impatient to see its young, flew off like lightning, and arrived in Aleppo in ten hours from Alexandretta, and in two days from Bagdad. It was easy for them to

find their way back, as Aleppo may be discovered at an immense distance. This pigeon has nothing peculiar in its form, except its nostrils, which instead of being smooth and even, are swelled and rough."

We shall conclude our extracts with the following, which is from *Wilson's American ornithology*:—

"The wild pigeon of the United States inhabits a wide and extensive region of North America, on this side of the Great Stony mountains, beyond which, to the westward, I have not heard of their being seen. According to Mr. Hutchins, they abound in the country round Hudson's Bay, where they usually remain as late as December, feeding, when the ground is covered with snow, on the buds of juniper. They spread over the whole of Canada —were seen by Captain Lewis and his party near the Great Falls of the Missouri, upwards of two thousand five hundred miles from its mouth, reckoning the meanderings of the river—were also met with in the interior of Louisiana, by Colonel Pike, and extend their range as far south as the Gulf of Mexico, occasionally visiting or breeding in almost every quarter of the United States.

"But the most remarkable characteristic of these birds, is their associating together in their migrations, and also during the period of incubation, in such prodigious numbers as almost to surpass belief; and which has no parallel among any other of the feathered tribes on the face of the earth, with which naturalists are acquainted.

"These migrations appear to be undertaken rather in quest of food, than merely to avoid the cold of the climate, since we find them lingering in the northern regions around Hudson's Bay so late as December; and since their appearance is so casual and irregular, sometimes not visiting certain districts for several years in any considerable numbers, while at other times they are innumerable. I have witnessed these migrations in the Tenessee country—often in Pennsylvania, and also in various parts of Virginia, with amazement; but all that I then saw of them were mere straggling parties, when compared with the congregated millions which I have since beheld in our western forests, in the states of Ohio, Kentucky, and the Indiana territory. These fertile and extensive regions abound with the nutritious beach nuts, which constitute the chief food of the wild pigeon. In seasons when these nuts are abundant, corresponding multitudes of pigeons may be expected. It sometimes happens, that having consumed the whole produce of the beach trees in an extensive district, they discover another at the distance perhaps of sixty or eighty miles, to which they regularly repair every morning, and return as regularly in the course of the day or in the evening, to their place of general rendezvous, or, as it is usually called, the *roosting-place*. These roosting-places are always in the woods, and sometimes occupy a large extent of forest. When they have frequented one of these places for some time, the appearance it exhibits is surprising. The ground is covered to the depth of several inches with their dung; all the tender grass and underwood destroyed; the surface strewed with large limbs of trees, broken down by the weight of the birds clustering one above another; the trees themselves, for thousands of acres, killed as completely as if girded with an axe. The marks of this desolation remain for many years on the spot; and numerous places could be pointed out where, for several years after, scarcely a single vegetable had made its appearance.

"When these roosts are first discovered, the inhabitants from considerable distances visit them in the night with guns, clubs, long poles, pots of sulphur, and various other engines of destruction. In a few hours they fill many sacks, and load their horses with them. By the Indians, a pigeon-roost, or breeding-place, is considered an important source of national profit and dependance for that season, and all their active ingenuity is exercised on the occasion. The *breeding-place* differs from the former in its greater extent. In the western countries, above mentioned, these are generally in the beech woods, and often extend in nearly a straight line across the country for an immense way. Not far from Shelbyville, in the state of Kentucky, about five years ago there was one of these breeding-places, which stretched through the woods in nearly a north and south direction, was several miles in breadth, and was said to be upwards of forty miles in length. The pigeons made their first appearance there about the 10th of April, and left it altogether, with their young, before the 25th of May.

"As soon as the young were fully grown, and before they left their nests, numerous parties of the inhabitants from all parts of the adjacent country, came with waggons, axes, beds, cooking utensils,—many of them accompanied by the greater part of their families, and encamped for several days at this immense nursery. Several of them informed me, that the noise in the woods was so great as to terrify their horses, and that it was difficult for one person to hear another speak without bawling in his ear. The ground was strewed with broken limbs of trees, eggs, and young squab pigeons, which had been precipitated from above, on which herds of hogs were fattening. Hawks, buzzards, and eagles, were sailing about in great numbers, and seizing the squabs from their nests at pleasure, while from twenty feet upwards to the tops of the trees, the view through the woods presented a perpetual tumult of crowding and fluttering multitudes of pigeons, their wings roaring like thunder, mingled with the frequent crash of falling timber, for now the axemen were at work cutting down those trees that seemed to be the most crowded with nests, and contrived to fell them in such a manner, that in their descent they might bring down several others, by which means the falling of one large tree sometimes produced two hundred squabs, little inferior in size to the old ones, and almost one mass of fat. On some single trees upwards of one hundred nests were found, each containing *one* young bird only, a circumstance in the history of this bird not generally known to naturalists. It was dangerous to walk under these flying and fluttering millions, from the frequent fall of large branches, broken down by the weight of the multitude above, and which in their descent often destroyed numbers of the birds themselves, while the clothes of those engaged in traversing the woods were completely covered with the excrements of the pigeons.

"When the author was in this part he saw the remains of the vast aviary he has described, but the pigeons were then settled about 80 miles off, near Green River; and his own observation of their daily flight in search of food, and return, confirms the most exaggerated report of their incalculable multitude. For many hours the living torrent poured over head, as thick as the birds could crowd together, and as far as the eye could see. The breadth of the body was also very considerable—several miles, as also was their new breeding-place.

"It was said to be in Green County, and that the young began to fly about the middle of March. On the 17th of April, forty-nine miles beyond Danville, and not far from Green River, I crossed this same breeding-place, where the nests, for more than three miles, spotted every tree; the leaves not being yet out, I had a fair prospect of them, and was really astonished at their numbers. A few bodies of pigeons lingered yet in different parts of the woods, the roaring of whose wings was heard in various quarters around me.

"All accounts agree in stating, that each nest contains only one young squab. These are so extremely fat, that the Indians, and many of the whites, are accustomed to melt down the fat for domestic purposes, as a substitute for butter and lard. At the time they leave their nest they are nearly as heavy as the old ones, but become much leaner after they are turned out to shift for themselves.

"It is universally asserted in the western countries, that the pigeons, though they have only young ones one at a time, breed thrice, and sometimes four times, in the season; the circumstances already mentioned render this highly probable. It is also worthy of observation, that this takes place during that period when acorns, beech nuts, &c. are thereabout in the greatest abundance, and mellowed by the frost. But they are not confined to these alone; buckwheat, hempseed, Indian corn, holly berries, hack-berries, huckle-berries, and many others, furnish them with abundance at almost all seasons. The acorns of the live oak are also eagerly sought after by these birds, and rice has been frequently found in individuals killed many hundred miles northward of the nearest rice plantation. The vast quantity of mast which these multitudes consume, is a serious loss to the bears, pigs, squirrels, and other dependants on the fruits of the forest. I have taken from the crop of a single wild pigeon a good handful of the kernels of beech nuts, intermixed with acorns and chesnuts. To form a rough estimate of the daily consumption of one of these immense flocks, let us first attempt to calculate the numbers of that above mentioned as seen in passing between Frankfort and the Indiana territory. If we suppose this column to have been one mile in breadth (and I believe it to have been much more) and that it moved at the rate of one mile in a minute; four hours, the time it continued passing, would make its whole length two hundred and forty miles. Again, supposing that each square yard of this moving body contained three pigeons, the square yards in the whole space multiplied by three, would give two thousand two hundred and thirty millions, two hundred and seventy two thousand pigeons! an almost inconceivable multitude, and yet probably far below the actual amount. Computing each of these to consume half a pint of mast daily, the whole quantity at this rate would equal seventeen millions, four hundred and twenty-four thousand bushels per day! Heaven has wisely and graciously given to these birds rapidity of fight, and a disposition to range over vast uncultivated tracts of the earth, otherwise they must have perished in the districts where they resided, or devoured up the whole productions of agriculture as well as those of the forests."

The Philanthropist.

SOCIETY FOR SUPERSEDING THE NECESSITY OF CLIMBING BOYS FOR SWEEPING CHIMNEYS.

(From the Athenæum.)

To effect the entire abolition of the cruel custom of employing climbing-boys in chimney-sweeping, nothing more, we are persuaded, is required than to create a public conviction of the existence of some practicable and efficacious plan by which the necessity for having recourse to it may be avoided. It is with sincere satisfaction, therefore, that we read the last report (the fourteenth) of the society which has been formed with the view of superseding the use of climbing boys, and that we observe the progress lately made towards the attainment of the object of this excellent association. By the report alluded to we find that such an improvement has been effected in the machine for sweeping chimneys, invented under the auspices of the society, that there are now very few cases in which it will not operate with complete success. The instrument so improved has been submitted to the Surveyor of the Board of Works, and on the strength of a favourably written report on it from him, a document which is included in the appendix to the report published by the society, and through the influence of Mr. Secretary Peel, it has been adopted in the public offices, and, by order of the Lord Chamberlain, in the Royal palaces. The annual report of the society contains, moreover, numerous testimonies to the effectual operation of the machine from various parts of the kingdom. It now seems to rest with the public, therefore, to complete the good work which has been so charitably and judiciously commenced. All that is required for this purpose is, that individual householders should insist on the use of the machine in the cleansing of their own chimneys, whatever objections servants or master-sweeps may raise against it. The latter are generally hostile to the improvement, because the employment of the machine demands a little more personal trouble, or a trifling additional expenditure on their parts; the management of it requires either the attendance of the master himself, or, at least, of older and stronger boys than those who now generally perform the office; hence the charge of wages falls somewhat heavier. The present prices, however, are a fair remuneration for the labour of cleansing chimneys by machinery; and for the purpose of ensuring to individuals the opportunity of enforcing attention to their benevolent wishes in this respect, and of providing a remedy for cases in which masters are refractory, persons, provided by the society with the necessary machines, are established in two distinct quarters of the town. They cleanse chimneys by mechanical means only at the prices usually charged in the trade, and with superior cleanliness and effect.

The society, however, while they appeal to the humanity of the public, urging them to concur in putting an end to a practice so barbarous, do not propose to depend entirely on the effect of voluntary co-operation. "Impressed," say they, "with the full conviction that, owing to the poverty, ignorance, indolence, and hardened habits of most of the master chimney-sweepers, the indifference of many householders, and the prejudices of servants, the evil will never be wholly remedied but by the aid of Parliament, they have prepared a bill for the better regulation of chimney-sweepers and their apprentices, the principal provisions of which are to prohibit climbing for the purpose of extinguishing fires in chimneys by any person under twenty-one years of age, after twelve months from the passing of the act; and to fix the lowest age at which it shall be lawful to bind a child apprentice to a chimney-sweep at fourteen years. The bill will be submitted to Parliament next session: the application was intended to to be made during that which has just closed, but was postponed in consequence of the devotion of so much of the time of the two Houses to the Catholic question. A revision of the Building Act, with the introduction of clauses providing for the future construction of flues in such a manner as to admit of their being readily swept by machinery, is also in contemplation.

The most cordial wishes for success, of every heart alive to the especial claims for protection of orphanage, infancy, and helplessness, not dead in short to the commonest feelings of humanity, must attend the labours of this truly Christian society.

The Essayist.

ON DRESS.

TO THE EDITOR.

Sir,—The following is one of a series of essays written at the request of a female relative of the author.

Dear ——

I don't know now whether I am not upon preserved ground, without a license; but as my object is to do good, not harm, I must hope indulgence for my trespass. I may not, indeed, add much to your knowledge in the "crafte and mysterie" of mantua-making. I am not "learned in the law" of flounce and furbelow; but listen as attentively as you can, and you shall perhaps have a few ideas on the subject nearly as profitable as any dissertation in the *Ladies' Magazine.*

It is no difficult matter to persuade a young woman that she should learn to dress well. It is generally at the top of her list of studies, engrosses the most of her time, and affords her the most pleasure. Yet, with all their devotion to it, there are few things which women so little understand: not that I mean the mere art of making it; but its management and regulation. And the reason is, because they think lightly upon all subjects and upon dress: they study it for its own sake, without any idea that it may be made conducive to the most important ends. For a tea-party, or a theatre, or a ball, they will indeed exercise all their skill; and the attitude of a feather, or the position of a curl, shall determine the expression of the countenance, as it by turns excites and destroys some of Vanity's sweetest and most satisfied smiles. For the sake of rivalry and display, I say, they will exert themselves; and, if I may do it without fear of my eyes being scratched out, I should assert that, to nine women out of ten, it is a more delightful sensation to create envy than admiration; but the woman that creates both is at the very pinnacle of woman's ambition: a dangerous height, which turns herself giddy, as well as those who look at her.

Believe me when I tell you, that however attractive you may make yourself, however much you strive to appear to advantage, *in public*, it is not there that your labour will find its reward; it is not there that your taste in dress will be of any intrinsic value to you. The lustre of a diamond is less conspicuous when we mix it with other diamonds; the effulgence of the moon becomes weak and faint beside the more dazzling splendour of the sun. Where there is a real and correct taste in dress, it will be seen not merely on any one particular occasion, but at all times; equally in the calm retirement of domestic life, as in the crowded haunts of gaiety and fashion. But an evil to which your sex is especially prone, and which I would guard you against, is a habit of thinking that all study on the score of dress may be laid aside as soon as you come within your own domestic circle, to be resumed only when Pleasure again beckons you to join her votaries. The remark will not apply, perhaps, to that privileged class who are exempt by circumstances from the necessity of exertion in the more industrious pursuits of life, and to them I am not speaking. I am speaking to you who are of a class and move in a sphere wherein too much or too little attention to dress may be injurious to you. I have known serious unhappiness spring from both causes; but it is of the latter that I am now more particularly speaking. And what I wish to impress upon you is, that nothing marks the superiority of a sensible over an ignorant and vulgar mind, than a habit of attention to dress, under all circumstances, ordinary as well as extraordinary. Not that you need, or that it would be becoming in you, to wear the same dress at your work-table as you would in a ball-room, but that nothing more easily excites dislike, and even disgust, in our sex, than to see a wife or a sister a fine lady abroad, and a slipshod sloven at home; as, on the other hand, nothing more strongly, though insensibly, rivets our attachments than an unvarying attention not to the elegance, but the simplicity of dress. It subjugates the feelings of men by a sort of enchantment, and I doubt much whether personal beauty has a more powerful influence over them. This I know for myself, that I consider it one of those virtues which sit so well and so gracefully upon women, that without it I could not admire the beauty of a Hebe, or respect the wisdom of a Minerva. And, rest assured, there is the same feeling in every well constituted mind through all the gradations of society. Obscurity of station, and poverty of circumstance, are very ready and general apologies for negligence in dress; but, believe me, this is only the excuse of the idle or the improvident. Search into the truth, and you will find these poor and obscure people can afford to purchase finery *unbecoming* their station, and *disproportioned* to their circumstances, whilst, in their usual appearance, they neglect that ornament which is *always* cheap, and *always* becoming,—cleanliness.

Strange, and almost unnatural, as it may seem, women too generally bestow more pains in adorning themselves to court the passing admiration of strangers, than they will to secure the regard of their best and sincerest friends. You have remarked some of this description. For an assembly, or a theatre, what preparation there is!—what solicitude and anxiety to gratify their own vanity, and mortify that of others! But at home, what languor and indolence! No, it matters not there: if their hair be in paper, or their cap dirty, there is nobody to notice it whom they care for;—and who is it that they do care for?—the multitude, who care nothing for them. A stranger enters unexpectedly—they are disconcerted, abashed, make a thousand apologies for their dishabille, but thought it was their brother, or their cousin.

Never, I hope, will my beloved girls allow this fatal error to creep into their minds. You will understand that I consider its prevalence greater after marriage than before, and then most of all injurious to domestic happiness. There is nothing in the temper or the manners of women that can aim a more deadly blow at the affections of our sex than this disregard of personal appearance. Men are not so easily beguiled but that they know you are indebted to external ornament for more than half your attractions; yet, take it for a truth, they will at any time thank you for cheating them of that knowledge, for when we rob human nature of its illusions we rob ourselves of our happiness.

Be it your study, therefore, as a part of your duty, therefore a part of your religion, to appear on all possible occasions neatly, however plainly dressed. I may extend the advice, and say, if you are destined to be mothers, be as scrupulous with your children. It will secure two good ends—it will save you many bills from the doctor, and increase your husband's attachment to you and them. The beauty and innocence of children is often hidden and disfigured for want of maternal care, and hence that which should naturally cement the affections is frequently a cause of their alienation.

For you who do not, nor perhaps ever will move in any but a humble sphere, there will be times when your household duties require you to wear suitable attire. Be it so—but take the earliest opportunity of resuming your usual appearance, and exercise no more freedom, in this respect, with your husband, or your relations, than you would with strangers. Take the course opposite to that which most of your sex pursue—that is, conduct your domestic arrangements without noise, and let such as subject you to personal exertion be done, as much as possible, in your husband's absence.

In one word, let me impress upon you, that neither beauty, talents, nor accomplishments will make your fireside so happy, or keep your husband from the tavern, or the billiard-table, so effectually as attention to dress, bestowed for his sake, and not for the world's.—Adieu, affectionately yours, R. F.

LIST OF NEW PATENTS.

To. J. Lambert, Esq. of Liverpool-street, London, for an improvement in making iron, applicable at the smelting of the ore, and at various subsequent stages of the process, up to the completion of the rods or bars, and for the improvement of the quality of inferior iron.—Dated the 30th of March, 1829.—4 months allowed to enrol specification.

To W. Prior, of Albany-road, Camberwell, for improvements in the construction and combination of machinery for securing, supporting, and striking the topmasts and topgallantmasts of ships.—11th of April.—6 months.

To J. Lihon, of Guernsey, but now residing at the Naval Club-house, Bond-street, a commander in our royal navy, for an improved method of constructing ships' pintles, for hanging the rudder.—14th of April.—6 months.

METEOROLOGICAL DIARY.

[*From the Liverpool Courier.*]

	Barometer at noon.	Extreme during Night.	Thermometer 8 morning	Extreme heat During day.	State of the Wind at noon.	Remarks at noon.
July						
29	29 48	52 0	53 0	63 0	N.N.E.	Rain.
30	29 62	54 0	58 0	69 0	N.N.E.	Fair.
31	29 78	54 0	58 0	66 0	N.	Fair.
Aug.						
1	29 97	58 0	63 0	68 0	N.W.	Fair.
2	29 98	58 0	67 0	69 0	N.W.	Fair.
3	29 60	58 0	64 0	66 0	W.	Rain.
4	29 53	54 0	58 0	63 0	W.N.W.	Stormy.

29th, Rain during night.
30th, Eight, a.m. showery.
Aug. 3d, Eight, a.m. heavy rain.
4th, Very stormy during night; five, p.m. rain.

REMARKS FOR JULY.

Monthly mean of atmospherical pressure, 29:58; mean temperature,—extreme during night, 55:24; eight, a.m. 61:21; noon, 65:28; extreme during day, 68:10; general mean, 63:20; prevailing winds, westerly; maximum of temperature, (24th July, 1829,) 78—(July, 1828) 78; minimum of temperature, (29th July, 1829,) 52—(July, 1828,) 49.

Summary of the Month.—20 days fair, 7 rain, 4 cloudy. Thunder-storms on the 11th and 20th; and very severe, with lightning during the whole of the afternoon, from four, p.m. on the 24th.

Tide Table.

Days.	Morn. h.	Morn. m.	Even. h.	Even. m.	Height ft.	Height in.	Festivals, &c.
Tuesday ..11	7	38	8	11	12	1	
Wednesday12	8	43	9	12	13	7	King Geo. IV. born 1762.
Thursday 13	9	39	10	3	15	4	
Friday 14	10	26	10	50	17	2	Full Moon, 10h. 13m. even.
Saturday..15	11	13	11	35	19	0	
Sunday...16	11	58	——		20	2	9th Sunday after Trinity.
Monday ..17	0	20	0	43	20	9	
Tuesday ..18	1	5	1	28	20	6	

Poetry.

THE SLEEPERS.

Sleepers, who the sleep profound
Sleep in consecrated ground,
Sleepers! sleep on!
Sleep ye, for the storm is past,
Sleep, for ye have wept your last;
Sleepers! sleep on!

Sleep, for hushed the billows roar,
Sleep, the battle's rage is o'er;
Sleepers! sleep on!
Slumber till that morning bright
Herald ye to realms of light;
Sleepers! sleep on!

Sleep ye on your pallet low,
Screen'd, for ever screened from woe;
Sleepers! sleep on!
Sleep, for loudly pealing near
Heaven's artillery I hear;
Sleepers! sleep on!

Sleep, the chilly winds blow keen,
Sleep, the lightning yet is seen;
Sleepers! sleep on!
Sleep, and never sorrowing tear
Dim a shrine so heavenly fair;
Sleepers! sleep on!

Sleep, ye happy slumberers, sleep,
'Tis the living wake to weep;
Sleepers! sleep on!
Sleep, the storm is not for you,
Sleep, with grief ye've nought to do;
Sleepers! sleep on!

Favoured Sleepers! happy dead,
Slumbering on your narrow bed;
Sleepers! sleep on!
Sleep, and be your place of rest
With olive and the myrtle drest;
Sleepers! sleep on!

Liverpool. G.

VOYAGE OF DISCOVERY TO THE POLAR REGIONS.

A PRIZE POEM,

BY T. LEGH CLAUGHTON, TRINITY COLLEGE, OXFORD.

χειμερια τα πραγματα!
ARISTOPH. ACHARN.

On Northern shores the year's untimely close
Has mantled Nature in her garb of snows,
The glorious sun is sinking into gloom,
As youth before its time into the tomb.
And in the keen clear air, as fade away
The streamy splendours of departing day,
Fantastic shapes of crystal* fretwork gleam,
And drink a borrowed lustre from his beam.
O'ersarched with colours bright as those which dye
The sign of Promise in the summer sky,
Shines his last setting: rays of brilliant hue
Spangle the cloudless heaven's unsullied blue,
Like smiles of parting, often loveliest, when
The hearts they sever ne'er shall meet again.
'Tis past: night deepens o'er yon vessel's prow
Embanked in ice and bedded round with snow:
Above—sad greeting to a seaman's eye—
The furled and idle sails flap mournfully:
Around—o'er scenes of dead and dull repose
The midnight moon her ghastly radiance throws,
Or shines the northern light with meteor fire,
And dims the lustre of the starry quire:
Tinged with pale rays gigantic icebergs rise
And lift their spectral summits to the skies;
Like the gray shadows of departed years,
Dimly distinct, each towering form appears.

Desolate land! how wild, uncultured, rude,
Thy drear expanse of boundless solitude—
The desert whiteness of the snow-clad hill—
The lifeless stream—but thou art lovely still!
For verdant meads, when summer months have smiled,
Like green Oases in the Lybian wild,
Bloom on the plain: fountains and bright cascades
Gem the dark woods, and glitter in the glades,
And o'er the tangled brake and steep ravine
In sombre clusters grows the lichened pine,
While flowers, that sprang unseen in mossy dells,
Their scentless buds inclosed in crystal cells,
Smile on the curious eye with varied hue,
And rise in living loveliness to view.

Oh! for the light of Nature's beauty now
To smooth with hope the seaman's anxious brow!
For here, though frozen damps* around him hung,
And pains intense the sinewy limb unstrung,
Day after day, in darkness and despair,
He plied the unvaried task with ready care,
And brushed the tear-drop from his manly eye,
As wayward Fancy glanced to days gone by.
And when he nightly knelt in praise—to bless
The Guide—the Guardian of his loneliness,
'Twas sweet to think that in the land he loved,
From that one heart, by long affection proved,
To the same God who watched his drear repose
The same fond prayer and suppliant sigh arose.

Oh! if we cherish holy thoughts in joy,
When flows life's cup of sweets without alloy—
If amid smiles the hope of Heaven appears
Glorious and bright—how passing bright in tears!
—His faint and wayworn few when Franklin led
O'er pathless wilds—the regions of the dead—
One miscreant saw with keen and envious eye
Their scanty food his comrade's wants supply—
Raised high the hand, and dealt the deadly blow,
With murder stamped in fire upon his brow;
Then on the bleeding form of him he slew
Fixed his stern gaze—nor maddened at the view!
But he was one,† whose dark and clouded sight
Heaven—with its countless worlds of glory bright—
Earth—waving with fair flowers and herbage green—
Ocean—with tribes untold and depths unseen—
Enlightened not,—nor on the untutored breast
The holier image of his God imprest.

The savage native when his consort dies
Slow paces round her tomb with downcast eyes,
Chants for her future peace with wizard spell,
And in low murmurs bids the dead farewell;
As though he deemed the spirit lingered not
On the cold earth, but sought some sunny spot,
Where timorous seals on shore at noontide play,
Or the huge walrus yields an easy prey,
Where bounding reindeer track the waste of snow,
And streams in spring through green savannahs flow—
He (like the hills that bore him) rude and lone
Dreams not of climes more glorious than his own,
Of bliss beyond the grave in blessed isles
Where spring and summer blend their loveliest smiles,—
Or of those valleys, gemmed with fragrant flowers,
Where rest the faithful in unfading bowers,
Quaff the vine's luscious tears, or half expire
Beneath the dark-eyed maiden's glance of fire!
Amid tempestuous seas, and fields of ice,
His creed has placed a lowlier Paradise:*
There swarthy hunters mount their cars again,
Lash their lean dogs, and scour along the plain,
Again adroitly steer the swift canoe,
Poise the sure dart, or twang the unerring bow.

Nor knew the peaceful tenant of the clime
The mystic legends of the Runic rhyme:
How after death in Odin's halls of gold
The steel-clad ghosts their midnight orgies hold,
In shadowy state around the board carouse,
And drink with ashy lips from sculls of foes:
Some taunting jest begets the war of words—
In clamorous fray they grasp their gleamy swords,
And, as in days of old, with fierce delight
By turns renew the banquet and the fight!

But sleep they still beneath their icy pall,
The snow-clad plain—the voiceless waterfall?
—Again that orb whose never-failing smiles
Beam on the valleys, daughter of the Isles,
Descends in splendour on the darkling sea,
Where strive thy sons in ceaseless toil for thee!
Curtained with amber clouds his orient ray
Sheds softened lustre on returning day.
The light awoke the monsters of the deep—
Ocean heaved wildly in his troubled sleep,
And hollow murmurs rose: then loud and clear
A booming sound broke on the startled ear;
Through yawning chasms the rushing waters flowed,
And crystal rocks on billowy currents rode:
Those phantom shapes, like sleeping storms that stood
Majestic in the moon-lit solitude,
Start from their trance, and clash in dread career,
Like warriors in the conflict of the spear;
Round their tall crests the lambent sunbeams play,
Leaps the white foam, and curls the glistening spray.
—The sunny skies above—the strife below—
Where wild winds howl, and eddying whirlpools flow,
Contrasted well earth's danger and distress
With heaven's deep calm and holy loveliness!
Yet onward still, though every groaning mast
Bends low and quivers to the frozen blast,
That lonely vessel steers; now plunging deep
Beneath the dark abyss with sudden sweep,
Now upward on the crested billows hurled,
A weary wanderer in a stormy world.
The undaunted crew with careful search explore
Each bay and inlet of the mazy shore,
Unravel link by link the chain of seas
That wind amid those Polar Cyclades;
Mark how the current's ceaseless, changeless flow
Sets from the strait, and bears upon their prow:†
Oh! could they curb its tide, or stem its force,
And trace that ebbless torrent to its source,
Where echoes loud the wave's tumultuous roar
From Bhering's rocks to dark Alvaska's shore!—
E'en now they hear the sharp Siberian gales
Sing in the shrouds and fill their heaving sails;
And far beyond Kamschatka's loneliest steep
Traverse in dreamy thought the boundless deep.
—The sun, whose baffled fires assailed in vain
Those icy bulwarks, here is Lord again;
Bright islands laugh beneath his rosy beam,
And blushing fruits and golden flow'rets gleam,

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* Nothing in the shape of a cloud was formed, but whatever little moisture might be in the air, was seen floating about in very minute spicula, assuming various forms of crystallization.—*Quarterly Review*, xxv. 198.

* The breath and other vapour accumulated during the night in the bed-places and upon the beams, and then immediately frose.—*Parry's Voyages.*

† Michel, the Murderer of Mr. Hood, who was one of the Iroquois: and though his countrymen are generally Christians, he was totally uninstructed and ignorant of the duties of religion.—*Franklin's Voyages.*

* "Khiva—Heaven."

† Alluding to the current through the Strait of the Fury and Hecla in the same direction as that which is observed to flow through Bhering's Straits round the Icy Cape.

Through palmy groves voluptuous breezes blow,
And gardens smile, and shining rivers flow.
Still roves the seaman's eye—nor lingers long
On that fair clime of sunshine and of song,
But wanders to the land, whose hills had been
His childhood's cradle, and the fairy scene
With which were twined those dreams of early joy,
Long years of after anguish ne'er destroy,
Which oft return, like the remembered tone
Of music in our native valleys known,
Sweet to the lonely ear, when some rude hand
Has waked its echoes in a foreign land.
And him—whose patriot spirit dared to brave
Heaven's angry storms, and ocean's treacherous wave—
Hailed the rude natives of a hundred isles
With glad coyennas† and with grateful smiles:
But fairer England greets the wanderer now—
Unfading laurels shade her Parry's brow;
And on the proud memorials of her fame
Lives, linked with deathless glory, Franklin's name!

† "Coyenna," an expression of joy and gratitude amongst the Esquimaux.

Scientific Notices.

(ORIGINAL.)

PHRENOLOGY.

DR. SPURZHEIM'S LECTURES.

LECTURE XII.

On commencing his twelfth and last lecture, Dr. Spurzheim remarked that he had now come to the last subject of which he proposed to treat, and a very important one it was, that of education. He wished to know whether any reflecting being could be satisfied with the present state of mankind, and whether it was impossible to resort to any other means than those hitherto employed in the education of man. When he spoke of education he did not mean merely the method of teaching Latin and Greek, or communicating a knowledge of the arts and sciences; he took a more extensive view of education, and included in it every thing that tended to the perfectibility of man, and to maintain him in the state of perfection thus attained. He might be asked if he thought it possible to render man perfect, to take away such of the animal feelings as were frequently productive of evil, as selfishness, ambition, &c.? In this sense he could not conceive the idea of the perfectibility of man; neither did he hold that any power given by the Creator could be, or ought to be, taken away. He did not suppose that any powers could be added by man to those bestowed by the Creator; neither did he believe it possible for man to endow his fellow-creatures with a nature differing from that which they had received. Various means might, however, be employed to promote the perfectibility of man. If certain powers were too active they might be rendered less so; others which were less active might become more so, if proper means were employed. In this way the powers might be increased or diminished. It was also possible to give the powers possessed a good direction, and prevent their taking a bad one. It was in this sense he spoke of perfection, as applied to man. He did not mean to speak against any means they chose to employ; but he maintained that the fulfilment of the whole will of the Creator was requisite to success, and that it was quite vain to expect that they could create powers and give abilities which nature had denied.

If they consulted history, turned to books of education, and considered all that divines and moralists had done, they would be astonished at the little progress man had made. He was sure that phrenology would tend greatly to promote the proper education of man, and the view he should take of it he would divide into two parts,—the means by which the powers given by the Creator might be increased or diminished, and those by which a better direction might be given to them. To accomplish the first object there were various means, some of which were well known, and others not sufficiently attended to. On these points his object would not allow him to enter into many details; all that he could then do was just to glance at some prominent facts. He was convinced that human nature would be much better understood than it was at present if man were but studied as other things have been. As long as philosophers shut themselves up in their closets, and there reflected on the nature of their own minds merely, human nature would never be understood; but if they condescended to observe man and his actions, and draw their inferences from experience instead of speculation, they would know much more of both. They attained the knowledge of other beings and things by studying them, and man must also be studied; the knowledge of the mind must be acquired by the means requisite for the acquisition of every other species of knowledge,—observation and inference. Man must also be perfected in the same way as other beings. He was often accustomed to say that man had more reason for animals than for himself; man would not employ his reasoning faculties on himself, and was far too proud to submit implicitly to the will of his Creator. In the animal kingdom he never endeavoured to create, but knew that to succeed he must submit; yet, as soon as he came to himself, he forgot the subject of his daily prayer, "Thy will be done on earth, as it is in heaven." Should this will merely be attended to as far as it coincided with individual opinions; or should the will be done wholly and entirely?

The body had important functions to perform, and must therefore be attended to. Medical men considered it only with reference to health, but this was not the only reason for which it merited attention. If, as phrenology taught, the body was the temple of the mind, and, indeed, its instrument, the importance of attending to its physical laws must be manifest. All history showed what had ever been the consequences of the neglect or perversion of this instrument. If the instrument were neglected, the consequences, though little thought of, were great indeed. In families and in nations, (and the comparison between the two in their periods of existence, infancy, youth, manhood, and old age, was closer than might at first be imagined,) it was singular to observe the tendency to degeneracy. If it were desirable to prevent this tendency, and arrive at a certain degree of perfection, to cultivate the intellect, and promote the knowledge of the arts and sciences, the instrument of the mind must be attended to as well as the mind itself. Parents were under a great responsibility in this respect; if they neglected the mind, their posterity would suffer; if they neglected the instrument of the mind, their posterity would also suffer; and thus the fault of the parents would be visited on the third and fourth generations of their descendants. He then, in referring to another cause of degeneracy, the intermarriage of near relatives, said he should be sorry to give offence by touching on such a point; but as, to his astonishment, medical men were backward in inculcating its importance, he must just allude to it. As a phrenologist, he spoke with the greatest conviction of the truth of his assertion, when he called this a mischievous and fatal error: it might be innocent in some who committed it, and it was therefore the more important that it should be generally understood that the body was subject to certain laws, which must be submitted to, or their infraction would be most dangerous and injurious. The ancient legislators were most careful to prevent the marriage of near relations, and the law of Moses, in the Old Testament, was also very particular on this point. The custom of intermarriage between near relatives would be still more injurious if it were continued beyond the first instance. It might be desirable to keep money and other property in the family; but they might depend upon it, if the custom were continued, they would soon have descendants incapable of keeping either. This law went throughout all nature. Did they think that plants would continue to flourish in the same spot? He who changed it would be rewarded for his pains, whilst he who did not would suffer for his neglect. It was in vain to plead ignorance, the consequences being the same whether they knew it or not. An individual might not know that hemlock would kill, and it would be very harmless as long as he let it alone; but if he eat it, as soon as he committed the error he would be aware of the consequences. "O," exclaimed the Doctor, "if mothers, and those who have an influence on mankind, would but teach to man his own nature, and attend to the laws of his body and the nature of his mind, with the care and patience that are bestowed on less important objects, I am sure that man would be a very superior being!" *(Applause.)* The lecturer then made some remarks on what might be effected by an intelligent mother, and the great importance of such a blessing to the character and prospects of man. They might wish the brain to be good, because they knew that a good tree would bring forth good fruit; and if a child were born a genius, let his genius be cultivated; but they were not to neglect the child that was born almost an idiot; let them do what they could with his abilities also. *(Applause.)* The innateness of the powers was a most important point to be attended to in all political economy. Mankind were not all born alike, either in body or in mind, and thus was phrenology opposed to that philosophy which maintained the contrary doctrine. Children must receive a mental education, but it was to be observed, that their intellectual capacities were attended to to the neglect of their physical condition. Amongst the higher classes, particularly, children must learn the arts and sciences, but, unfortunately, the same attention was seldom bestowed on their bodies. Children first require health and strength, and then the ornament of the arts and sciences. A young being was considered a prodigy if he could read at three years old; he was so learned and so clever, that he was a perfect wonder. *(Laughter.)* And the poor creature must sit still the greater part of the day, instead of being allowed to run and jump about, and exercise his limbs as he wished to do. He was glad to be able to say that there was now a great change in this respect in the infant schools, where the young things were permitted to exercise their lungs and run about, a change which must be highly conducive to their welfare. Young children were but too often set to learn things which they could not understand any more than their instructors did themselves. *(Laughter.)* It was not every schoolmaster that was qualified for his situation, nor every school that was conducted with a sufficient knowledge of human nature. It was a great thing to attend first to the physical health of children; far more important and less cruel than to give them set lessons and teach them regular behaviour. In the infant schools these things were attended to, and he wished to know why the rich had not the same sense for their own children as they had for the children of the poor. The children of the higher classes were not permitted to take half enough of exercise, and many of them when they were sent out were cooped up in a carriage, where they could not use their limbs. Let this plan be continued, and the doctors would gain by it. *(Laughter.)* Let such a plan be continued, and the consequences would soon be apparent;—he spoke to those who had the means to procure education for their children,—who spoke so much of education, and paid so much for it. Amongst children of seven years of age, the girls must learn music and drawing, and the boys the classics;—the boys were generally more fortunate in having more exercise, but the girls, particularly in large towns, were occupied almost during the whole day within doors; the consequence was, they became very accomplished, they knew how to play music, and they could draw and paint; but what was the state of their physical constitution? When they married and became mothers, their offspring as well as themselves would suffer from the consequences of this perverse and mischievous system. It was neither natural nor proper that the mind should be cultivated at the expense of the body. The health should

first be cultivated, in order that the mind might be enabled to make use of its instrument, the body. He was sure that sufficient attention was not paid to this point, particularly among the higher classes, and yet it was one of very great importance. Perhaps it might be learned from observation how far the physical treatment of young persons might be improved, and it was a study highly deserving the attention of medical men.

Those who had taken interest in the study of human nature had inquired to what causes the differences observable in nations and people were to be attributed. The principal cause mentioned was climate; but there were a thousand things that could not be explained by the influence of climate. The inhabitants of certain climates differed very materially from each other; and tribes and families having no resemblance were to be found in the same climates. He could conceive how certain climates, being too hot, should prevent the operation of certain powers and give activity to others, because he saw that such was the effect of certain stimuli. If they took more wine than they were accustomed to, some of the intellectual faculties would be depressed, and other powers excited; thus the same stimulus might be exciting to certain powers and depressing to others. Heat might give activity to certain feelings, and, at the same time, be too great for some of the intellectual operations. If hot weather continued for some months, he was sure that all would feel relaxed, and deficient in their accustomed energy, and be very much relieved by the change to a more moderate temperature. The influence of climate could not, therefore, be denied; even food had its influence; and he was convinced that if medical men attended properly to their duty, much good might be effected in this particular. It would be admitted, that in a diseased state certain things had more influence on the body in general, others on the nerves, others on the circulation of the blood, and other medicines on different parts of the system. It would be a most important point to ascertain the causes which influenced the various systems in various degrees at different periods. If the muscular system prevailed in a child five years old, all became muscle, and the nervous system was neglected; in another of the same age all the activity was concentrated in the nervous system. Much good must be the result of attention to this point. Throughout youth, as long as the body continued growing, the physical condition ought to be attended to; if it were neglected, their children and their posterity would suffer for it. There were various means by which this object could be attained. Exercise was one very important instrument which it was evident was not, by any means, sufficiently attended to. The principle of exercise was deserving of the greatest attention, if it were a fact that all powers, whatever their nature, being exercised, increased and became stronger. By exercise, the muscles became stronger; the eyes were strengthened by the same means; even the fibres of plants which were exposed to the wind, and kept moving, were modified, and became much stronger than those of others which were placed in a more sheltered situation. The same principle went through all nature. To exercise, meant to put into action; and in consequence of the ignorance of human nature and the fundamental powers, a great error was committed in education, in substituting theory for practice. If they spoke of gymnastic exercises, did they think it sufficient to put into the hands of a child a treatise on gymnastics, where the different muscles were described, and the mode of elevating them and putting them into action was pointed out? If the child were not allowed to exercise his limbs, would he be the better gymnastic, whatever theoretical knowledge he might attain? No; he must run and jump, and move about, or he would be very little the better for it. In teaching music, were they satisfied with giving their pupils a treatise on music to learn by heart, without permitting them to touch a musical instrument, or hear a musical sound? In teaching the art of painting, was it sufficient to give pupils a treatise on the harmony of colours to learn by heart, without ever putting a pencil in their hands? Would they ever make good painters on such a system? In like manner, if they proposed intellectual operations, the powers themselves must be called into action.

If it were proposed to educate the feelings, did they flatter themselves that they should accomplish this merely by precept? In order to strengthen benevolence, would it be sufficient to learn a chapter on the virtue? If the pupil never suffered himself, and never saw a suffering creature, would he become a benevolent being? So, to teach justice, was it sufficient to go to church three times on the Sunday, without being set to practise what they heard on the Monday? Many teachers would tell them that they succeeded better with the intellect than with the feelings. It was the custom of some to advise their hearers to do what they said, not what they did; but how could they expect motives to influence others, which, by their conduct, they showed had no influence on themselves?—(*Applause.*) If the feelings were stronger than the intellect, and were permitted to act without restraint, they would soon see what the consequences would be. Suppose that a child had been taught, for several months, how temperate and virtuous he ought to be; he comes home and sees the table well covered, and observes his parents enjoying themselves without restraint, and this one practical lesson has more influence with him than the precepts of many months. If they took two children, and spoke to one of them scientifically of digestion, whilst they gave him an insufficiency of food, and they gave food enough to the other, without letting him know a single word about the digestive organs, which did they think would digest best, notwithstanding the difference of theoretical knowledge between the two? Of two other children, equal in natural kindness of disposition, if one were set to learn a chapter on benevolence by heart, whilst the other could not read a word, but knew what it was to suffer, and to witness suffering, the different effects of precept and practice would soon be apparent. It was so on throughout. Man learned to fight by practice; he learned to be benevolent, respectful, even christian and righteous, by the same means; therefore, if they wished to succeed, they must adopt the same plan with respect to all the feelings and powers; and by practice the natural dispositions of all would be increased and strengthened.

Children learned not in school alone, but wherever they happened to be, and example was either much more dangerous or more beneficial to them than any precept could be. If they wished to put the powers into operation, they must know that the cause was not confined to certain motives; and that whenever the power was put into action, whatever the cause or object might be, the power itself was strengthened and increased by use. He often heard it complained of that adults were so much given to vanity, so fond of distinction, so proud, whilst others were as much addicted to selfishness. These two were considered the leading passions of mankind. He was not astonished that they should be so active, because he saw that they were exercised from the very earliest age. Besides being taught to act from these motives, children very often saw that they were more active in their parents and masters than any other; they saw their parents fond of distinction, ostentation, and not able to bear contradiction or disappointment, and it might be easily conceived that such example would do them a great deal of harm. The activity of the same powers in the child might not be employed in the same way, but it would seek a gratification similar in effect. They were mistaken if they thought that the feelings which had thus gathered strength in children could not be gratified to the same extent as in adults. Sometimes the feelings were so strong in children that they could never become stronger, though they might change their direction. A boy might suffer as much from the loss of a butterfly as he would do from a much greater deprivation when he became a man, and he would also be as happy from a trifling cause as a man would be from something of much greater moment. It was surprising how much vanity and the love of approbation were exercised in children. A child said his lesson well, he must be praised for it; he danced well, and they broke out into commendations on the elegance of his movements and the graceful manner in which he made his compliments. (*Laughter.*) It was the same throughout, and hence the child learned what little things procured him praise and admiration, and trifles, therefore, were but too apt to give him gratification. (*Applause.*) If they found the love of approbation strong in children, there was no necessity to give it greater strength by encouragement; selfishness and all the other feelings should be treated in the same way. It was also too much the custom to encourage the acquisitiveness of children; they were too much taught to think that nothing should be done without a present reward. If a child took medicine for his own good, still he must be rewarded for it, and how then could they be astonished on finding children so ambitious of reward that they could not be induced to do any thing from any other motive? The disposition being cultivated from the earliest age it was not at all surprising that it should become so strong. As soon as they observed it strong, there was no necessity to increase it by encouragement and exercise. The increase did not depend on the object; whether that was high or low was of no importance, as whenever the power was put into action it was exercised.

It was also a very important matter to exercise the powers as they appeared in succession. Even if they were determined not to become phrenologists, he should gain a great point if they would only tell him that they would observe children. Philosophers told them that all were born alike, but by observation they would soon see whether this was the fact or not. If they continued to observe, they would find that certain powers appeared sooner than others; in the feelings, as well as the intellect, they did not appear at the same time. Being a phrenologist, he should look for the reason of this, and he found that the instruments of different powers did not increase at the same time, nor in the same proportion; certain parts of the brain increased sooner than others, and possessed more activity, just as in new-born children the sight was less perfect than the smell or the taste, and the instruments were not equally strong in the same proportion. If they studied the intellectual powers of children, they would always find that *individuality* was developed sooner than any other. In young beings the parts above the superciliar ridge increased sooner than any other. The human understanding must acquire notions; they wish to know objects, and become acquainted with what is going on; they wish to know every thing around them, and not to sit quiet and still, and learn their A, B, C. The muscular system is very strong; they wish to run about and become acquainted with all external objects, and if they would suffer children to do so it was astonishing what a number of things they would learn with ease and pleasure; but they would not permit their children to do this; they said "No—come and learn your grammar." (*Laughter and applause.*) A child of five or six years old must learn grammar, and soon afterwards he was set to Greek and Latin; if he had acquired a knowledge of languages at eighteen or nineteen he was then set to natural history, but then probably he would have lost his disposition for it. Hence it was of the greatest importance that in the cultivation of the powers they should follow the order and natural progress of the human mind, and they might depend upon it that much more would be gained by doing this than by reversing the order. If at a certain period some power were not active in a child, they give him pain by attempting to exercise it, whilst he would receive pleasure from it at another period, would they but consult his natural disposition. Neither were the feelings active in the same degree at the same period. Certain parts were so strong in young children, that, to a certain degree, they might be said to be already men. Did they think that children could acquire ideas by merely learning by heart what they did not understand? Was it sufficient to enable them to repeat sentences like parrots? They ought to appeal to the feelings:

and the intellectual powers throughout, according to the natural succession, and they would gain much more by doing so than by adopting the contrary mode of proceeding.

It was also an important point that the degree of exercise should be adapted to the power. It was difficult but important to attend to this, because whenever they exercised a power they should do so according to its strength; if it were not exercised enough the power would lose; if it were exercised too much great harm would be done. Great errors were often committed in education, and much injury was the result of them. Some children were strong in constitution, others weak,—ought they to be educated in the same way? Some had delicate nerves;—some children had the feelings so precociously strong that their countenances harmonized with those of adults of the same disposition. Some children had a strong capacity for learning the languages, and it was thought a fine thing for a young being of ten or twelve years old to know several languages; some had the same extraordinary disposition to acquire the different arts and sciences, and it was well known that many clever children perished at a very early age. Hence arose the prejudice against too much talent. It was a very general idea that those who were possessed of it were too clever to live; that they were too good for this world. It was moreover very common to observe, that individuals of extraordinary genius, if overworked when young, became very middling in their talents and attainments afterwards, their powers being prematurely exhausted and leaving them. Therefore, in education it was important to employ the powers according to the powers themselves; they were neither to be too much excited nor suffered to remain idle too long. He thought the general practice with regard to vacations injurious; if their children learned Latin and Greek, it would be fatiguing and injurious to keep them always at it; but if they changed the order much good might be done. He was sure that education might be constantly pursued so that pupils would gain the whole year round. Teachers knew well that for the first fortnight after the vacation children were less able and less willing to learn than at any other period of the year:—all was out of order, and they were not able to fall into the regular routine for some time afterwards. Children of weak nerves required greater care and attention than others. Delicate health was very frequently the companion of precocious talents, and in this case they ought to suffer children to be quiet; attend first to their health, and there would be time enough to cultivate the intellectual powers afterwards. Some children had very large heads, and were apparently a little stupid, and a little idle and sluggish; some of these could not learn to speak till they were two or even five years of age; but notwithstanding all this, there were very many examples of such individuals afterwards evincing superior capacities and turning out eminent characters. Hence it was very important to understand and attend to the instruments of the mind, and if certain powers were too strong, to let them rest, because in sleep the mind reposed. At the expense of health they might do something, but it was much better not to attempt it till it could be done without injury. Their success would not always be the same. Whatever they did with some children the same lesson would not be productive of the same effect on different individuals, because their capacities were not the same. From time to time there was a stagnation of intellect, generally about the climacterics, when the body grew rapidly; if they observed children they would soon notice this periodicity. Sometimes young boys evinced talent, but they began to grow fast, and their parents lamented that they became duller than they had been; if they saw this, they need not be uneasy, for after a short period they would see their children clever again. Intelligent boys who liked to learn, could not always study with the same effect, however they attempted it. This explained the advantages of mutual instruction, where children taught children.—Mutual instruction depended on the repetition of lessons,—a system which could not be sufficiently commended. The same mode of instruction ought to be applied to the different feelings they wished to put into action. He recommended whatever was taught mutually to children,—as on the Lancastrian system. The children gained by having many masters. It was impossible to repeat with a number of boys individually the same lesson; but it was very easily done if they placed fifty boys together in the same class. Perhaps the first time a boy would not pay attention, but by means of repetition he could scarcely avoid acquiring what was taught to the rest. It was thought by some that monitors were losers by the system of mutual instruction, but he was convinced that the monitors learned the most, and reaped the greatest advantage from it. A clever boy learned his lesson sooner than his companions, and whilst waiting for the rest, he would, probably, be idle; if he were a quiet boy he would remain quiet; but if he were a lively one he would, most probably, get into mischief, and he must be punished for it: instead of being allowed to remain idle, when he had learned his lesson, he ought to be set to repeat it with his companions, and instead of losing by this system he would gain—as a stronger impression of what he had learned would thus be fixed upon the mind. This system of mutual instruction ought always to be followed where it was practicable.

He might be asked whether the parts of the brain became larger by being exercised. The parts of the brain increased like the rest of the body, and in the same way. If certain powers were too active, let them be kept quiet as much as possible, and let others which were more quiescent be put into action, and it would soon be found, from the organization of the powers put into action, whether they increased or not. The arms and other parts of the body were increased by being put into action, and so was the brain. Young men who studied too closely and too long would be able to tell whether certain parts of the head did not ache when certain powers were too much exercised. This was not always the case, nor did the brain always increase in the same proportion; thus, if a person sat quiet in the winter, when he began to exercise his limbs again he would feel fatigued soon, but he would be gradually less so, and his muscles would not increase in the same proportion as at first. If a lady exercised her fingers at the piano, the organ of tune would not be increased in the same proportion, but quickness and facility were the necessary consequences of exercise. Some were slow and difficult of apprehension, others naturally so quick that they acquired a thing at once, and almost as soon as the mouth was opened comprehended the meaning. Some individuals required more exercise; others did better with less. It would be found highly advantageous to exercise the mind and body according to their strength. Teachers well knew that if children were permitted to remain idle for some time, their lessons were not learned so easily. Thus, if the organ of language had been suffered to remain idle, it would be some time before it regained its ordinary strength and facility. From these circumstances they would find that exercise was a kind of second nature; and though powers could not be created by it, they might be greatly strengthened and improved. Exercise and habit would be found to have immense influence.

The mutual influence of the powers on each other was also a point of great importance in education, which ought to be attended to, and this could only be done by means of phrenology. Some of the powers excited and acted on others, and many might be put into action by one. Emulation was a great motive with many, who would do much more from the love of approbation or ambition than from any other cause. The same might be said, more or less, of selfishness and other powers. It was a study well worthy the time and labour bestowed upon it, to know the individual powers of the human mind, and ascertain how far they might be employed to excite others to action or restrain them.

Phrenologists admitted four means which had great influence in conducing to the perfectibility of man, in consonance with the ordinary way of Providence: the first was the innateness of the fundamental powers; the second, a physical education, conducive to the health of the body, in order to have a healthy mind in a healthy body, and this was a point of great importance, if only considered in reference to mental operations; the next, the exercise of the powers according to their condition and that of the body; and the last, the knowledge of such powers as were already active enough naturally. If children paid no attention from some motives, other powers which were stronger should be put in motion to stimulate to action. Then it was necessary to determine what direction the powers should take. Children might be respectful and reverent, and naturally disposed to consider the Supreme Cause of all in every thing they did; but all depended on the direction, whether they should belong to the English church or any other, or whether they should have no religion at all. All took an interest in the moral and religious education of children; but they should consider man in all his details, not only as an intellectual being, but also as an animal. His moral and religious and animal feelings ought all to be in harmony together. It was necessary that those engaged in education should understand human nature; for a great error was committed in supposing that all children were alike calculated to receive the same species of instruction, whether in religion or other things. If they thought they would arrive at the same results with a number of children, they would find themselves very much mistaken. Every mother and every teacher ought to adapt their instructions to individuals, and not seek to adapt the individuals to the instructions. To succeed with children, it was necessary that teachers should become children themselves.

Some philosophers, in speaking of mankind at large, proposed certain motives for the guidance of all mankind; was it possible to suppose that the same motives could have the same effect on all? Neither young persons nor adults could be influenced by the same motives. If any teachers gave merely one or two motives to mankind at large, they could only influence those who liked such motives; others would not come near them nor listen to them. It was impossible that the same motives could dispose all mankind to action. Mothers well knew that with some children they must be kind, or they could do nothing with harshness. Some children had a great deal of cautiousness, were very timid, and had no self-esteem, and their fathers could do nothing with them; they could not read so well nor learn so easily if harshly spoken to. Others were of quite a different character, and if they were not treated with firmness and a little harshness nothing could be done with them. If a boy were very obstinate, and fond of the expressions "I will,"—"I will not," they should be very careful not to encourage such a disposition by too much mildness and indulgence. If certain feelings were defective, they ought to appeal to others which had more influence. They should imitate the great example of him who became all things to all men. Those who maintained that all motives had equal influence, did not understand human nature. Parents and teachers found that emulation and the love of approbation, and desire of reward had all great influence, but they were mistaken if they thought that all could be done by means of these feelings. They would be found very insufficient for the advance and improvement of the arts and sciences. He did not regret the great influence of these motives, because he was content to take human nature as it is. If the higher motives failed, still he would not give up the point, because he wished to obtain his object. He would begin with human nature, but if he did not succeed with the higher feelings, the religious or the moral, should he, therefore, give it up? He would rather appeal to the selfishness of his pupil, and see what could be found in him as an animal, since he could not succeed with him as a man. Since he could not be moved as a man, he ought

first be cultivated, in order that the mind might be enabled to make use of its instrument, the body. He was sure that sufficient attention was not paid to this point, particularly among the higher classes, and yet it was one of very great importance. Perhaps it might be learned from observation how far the physical treatment of young persons might be improved, and it was a study highly deserving the attention of medical men.

Those who had taken interest in the study of human nature had inquired to what causes the differences observable in nations and people were to be attributed. The principal cause mentioned was climate; but there were a thousand things that could not be explained by the influence of climate. The inhabitants of certain climates differed very materially from each other; and tribes and families having no resemblance were to be found in the same climates. He could conceive how certain climates, being too hot, should prevent the operation of certain powers and give activity to others, because he saw that such was the effect of certain stimuli. If they took more wine than they were accustomed to, some of the intellectual faculties would be depressed, and other powers excited; thus the same stimulus might be exciting to certain powers and depressing to others. Heat might give activity to certain feelings, and, at the same time, be too great for some of the intellectual operations. If hot weather continued for some months, he was sure that all would feel relaxed, and deficient in their accustomed energy, and be very much relieved by the change to a more moderate temperature. The influence of climate could not, therefore, be denied; even food had its influence; and he was convinced that if medical men attended properly to their duty, much good might be effected in this particular. It would be admitted, that in a diseased state certain things had more influence on the body in general, others on the nerves, others on the circulation of the blood, and other medicines on different parts of the system. It would be a most important point to ascertain the causes which influenced the various systems in various degrees at different periods. If the muscular system prevailed in a child five years old, all became muscle, and the nervous system was neglected; in another of the same age all the activity was concentrated in the nervous system. Much good must be the result of attention to this point. Throughout youth, as long as the body continued growing, the physical condition ought to be attended to; if it were neglected, their children and their posterity would suffer for it. There were various means by which this object could be attained. Exercise was one very important instrument which it was evident was not, by any means, sufficiently attended to. The principle of exercise was deserving of the greatest attention, if it were a fact that all powers, whatever their nature, being exercised, increased and became stronger. By exercise, the muscles became stronger; the eyes were strengthened by the same means; even the fibres of plants which were exposed to the wind, and kept moving, were modified, and became much stronger than those of others which were placed in a more sheltered situation. The same principle went through all nature. To exercise, meant to put into action; and in consequence of the ignorance of human nature and the fundamental powers, a great error was committed in education, in substituting theory for practice. If they spoke of gymnastic exercises, did they think it sufficient to put into the hands of a child a treatise on gymnastics, where the different muscles were described, and the mode of elevating them and putting them into action was pointed out? If the child were not allowed to exercise his limbs, would he be the better gymnastic, whatever theoretical knowledge he might attain? No; he must run and jump, and move about, or he would be very little the better for it. In teaching music, were they satisfied with giving their pupils a treatise on music to learn by heart, without permitting them to touch a musical instrument, or hear a musical sound? In teaching the art of painting, was it sufficient to give pupils a treatise on the harmony of colours to learn by heart, without ever putting a pencil in their hands? Would they ever make good painters on such a system? In like manner, if they proposed intellectual operations, the powers themselves must be called into action.

If it were proposed to educate the feelings, did they flatter themselves that they should accomplish this merely by precept? In order to strengthen benevolence, would it be sufficient to learn a chapter on the virtue? If the pupil never suffered himself, and never saw a suffering creature, would he become a benevolent being? So, to teach justice, was it sufficient to go to church three times on the Sunday, without being set to practise what they heard on the Monday? Many teachers would tell them that they succeeded better with the intellect than with the feelings. It was the custom of some to advise their hearers to do what they said, not what they did; but how could they expect motives to influence others, which, by their conduct, they showed had no influence on themselves?—(*Applause.*) If the feelings were stronger than the intellect, and were permitted to act without restraint, they would soon see what the consequences would be. Suppose that a child had been taught, for several months, how temperate and virtuous he ought to be; he comes home and sees the table well covered, and observes his parents enjoying themselves without restraint, and this one practical lesson has more influence with him than the precepts of many months. If they took two children, and spoke to one of them scientifically of digestion, whilst they gave him an insufficiency of food, and they gave food enough to the other, without letting him know a single word about the digestive organs, which did they think would digest best, notwithstanding the difference of theoretical knowledge between the two? Of two other children, equal in natural kindness of disposition, if one were set to learn a chapter on benevolence by heart, whilst the other could not read a word, but knew what it was to suffer, and to witness suffering, the different effects of precept and practice would soon be apparent. It was so on throughout. Man learned to fight by practice; he learned to be benevolent, respectful, even christian and righteous, by the same means; therefore, if they wished to succeed, they must adopt the same plan with respect to all the feelings and powers; and by practice the natural dispositions of all would be increased and strengthened.

Children learned not in school alone, but wherever they happened to be, and example was either much more dangerous or more beneficial to them than any precept could be. If they wished to put the powers into operation, they must know that the cause was not confined to certain motives; and that whenever the power was put into action, whatever the cause or object might be, the power itself was strengthened and increased by use. He often heard it complained of that adults were so much given to vanity, so fond of distinction, so proud, whilst others were as much addicted to selfishness. These two were considered the leading passions of mankind. He was not astonished that they should be so active, because he saw that they were exercised from the very earliest age. Besides being taught to act from these motives, children very often saw that they were more active in their parents and masters than any other; they saw their parents fond of distinction, ostentation, and not able to bear contradiction or disappointment, and it might be easily conceived that such example would do them a great deal of harm. The activity of the same powers in the child might not be employed in the same way, but it would seek a gratification similar in effect. They were mistaken if they thought that the feelings which had thus gathered strength in children could not be gratified to the same extent as in adults. Sometimes the feelings were so strong in children that they could never become stronger, though they might change their direction. A boy might suffer as much from the loss of a butterfly as he would do from a much greater deprivation when he became a man, and he would also be as happy from a trifling cause as a man would be from something of much greater moment. It was surprising how much vanity and the love of approbation were exercised in children. A child said his lesson well, he must be praised for it; he danced well, and they broke out into commendations on the elegance of his movements and the graceful manner in which he made his compliments. (*Laughter.*) It was the same throughout, and hence the child learned what little things procured him praise and admiration, and trifles, therefore, were but too apt to give him gratification. (*Applause.*) If they found the love of approbation strong in children, there was no necessity to give it greater strength by encouragement; selfishness and all the other feelings should be treated in the same way. It was also too much the custom to encourage the acquisitiveness of children; they were too much taught to think that nothing should be done without a present reward. If a child took medicine for his own good, still he must be rewarded for it, and how then could they be astonished on finding children so ambitious of reward that they could not be induced to do any thing from any other motive? The disposition being cultivated from the earliest age it was not at all surprising that it should become so strong. As soon as they observed it strong, there was no necessity to increase it by encouragement and exercise. The increase did not depend on the object; whether that was high or low was of no importance, as whenever the power was put into action it was exercised.

It was also a very important matter to exercise the powers as they appeared in succession. Even if they were determined not to become phrenologists, he should gain a great point if they would only tell him that they would observe children. Philosophers told them that all were born alike, but by observation they would soon see whether this was the fact or not. If they continued to observe, they would find that certain powers appeared sooner than others; in the feelings, as well as the intellect, they did not appear at the same time. Being a phrenologist, he should look for the reason of this, and he found that the instruments of different powers did not increase at the same time, nor in the same proportion; certain parts of the brain increased sooner than others, and possessed more activity, just as in new-born children the sight was less perfect than the smell or the taste, and the instruments were not equally strong in the same proportion. If they studied the intellectual powers of children, they would always find that *individuality* was developed sooner than any other. In young beings the parts above the superciliar ridge increased sooner than any other. The human understanding must acquire notions; they wish to know objects, and become acquainted with what is going on; they wish to know every thing around them, and not to sit quiet and still, and learn their A, B, C. The muscular system is very strong; they wish to run about and become acquainted with all external objects, and if they would suffer children to do so it was astonishing what a number of things they would learn with ease and pleasure; but they would not permit their children to do this; they said "No—come and learn your grammar." (*Laughter and applause.*) A child of five or six years old must learn grammar, and soon afterwards he was set to Greek and Latin; if he had acquired a knowledge of languages at eighteen or nineteen he was then set to natural history, but then probably he would have lost his disposition for it. Hence it was of the greatest importance that in the cultivation of the powers they should follow the order and natural progress of the human mind, and they might depend upon it that much more would be gained by doing this than by reversing the order. If at a certain period some power were not active in a child, they give him pain by attempting to exercise it, whilst he would receive pleasure from it at another period, would they but consult his natural disposition. Neither were the feelings active in the same degree at the same period. Certain parts were so strong in young children, that, to a certain degree, they might be said to be already men. Did they think that children could acquire ideas by merely learning by heart what they did not understand? Was it sufficient to enable them to repeat sentences like parrots? They ought to appeal to the feelings:

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It was also an important point that the degree of exercise should be adapted to the power. It was difficult but important to attend to this, because whenever they exercised a power they should do so according to its strength; if it were not exercised enough the power would lose; if it were exercised too much great harm would be done. Great errors were often committed in education, and much injury was the result of them. Some children were strong in constitution, others weak,—ought they to be educated in the same way? Some had delicate nerves;—some children had the feelings so precociously strong that their countenances harmonized with those of adults of the same disposition. 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He might be asked whether the parts of the brain became larger by being exercised. The parts of the brain increased like the rest of the body, and in the same way. If certain powers were too active, let them be kept quiet as much as possible, and let others which were more quiescent be put into action, and it would soon be found, from the organization of the powers put into action, whether they increased or not. The arms and other parts of the body were increased by being put into action, and so was the brain. Young men who studied too closely and too long would be able to tell whether certain parts of the head did not ache when certain powers were too much exercised. This was not always the case, nor did the brain always increase in the same proportion; thus, if a person sat quiet in the winter, when he began to exercise his limbs again he would feel fatigued soon, but he would be gradually less so, and his muscles would not increase in the same proportion as at first. If a lady exercised her fingers at the piano, the organ of tune would not be increased in the same proportion, but quickness and facility were the necessary consequences of exercise. Some were slow and difficult of apprehension, others naturally so quick that they acquired a thing at once, and almost as soon as the mouth was opened comprehended the meaning. Some individuals required more exercise; others did better with less. It would be found highly advantageous to exercise the mind and body according to their strength. Teachers well knew that if children were permitted to remain idle for some time, their lessons were not learned so easily. Thus, if the organ of language had been suffered to remain idle, it would be some time before it regained its ordinary strength and facility. From these circumstances they would find that exercise was a kind of second nature; and though powers could not be created by it, they might be greatly strengthened and improved. Exercise and habit would be found to have immense influence.

The mutual influence of the powers on each other was also a point of great importance in education, which ought to be attended to, and this could only be done by means of phrenology. Some of the powers excited and acted on others, and many might be put into action by one. Emulation was a great motive with many, who would do much more from the love of approbation or ambition than from any other cause. The same might be said, more or less, of selfishness and other powers. It was a study well worthy the time and labour bestowed upon it, to know the individual powers of the human mind, and ascertain how far they might be employed to excite others to action or restrain them.

Phrenologists admitted four means which had great influence in conducing to the perfectibility of man, in consonance with the ordinary way of Providence: the first was the innateness of the fundamental powers; the second, a physical education, conducive to the health of the body, in order to have a healthy mind in a healthy body, and this was a point of great importance, if only considered in reference to mental operations; the next, the exercise of the powers according to their condition and that of the body; and the last, the knowledge of such powers as were already active enough naturally. If children paid no attention from some motives, other powers which were stronger should be put in motion to stimulate to action. Then it was necessary to determine what direction the powers should take. Children might be respectful and reverent, and naturally disposed to consider the Supreme Cause of all in every thing they did; but all depended on the direction, whether they should belong to the English church or any other, or whether they should have no religion at all. All took an interest in the moral and religious education of children; but they should consider man in all his details, not only as an intellectual being, but also as an animal. His moral and religious and animal feelings ought all to be in harmony together. It was necessary that those engaged in education should understand human nature; for a great error was committed in supposing that all children were alike calculated to receive the same species of instruction, whether in religion or other things. If they thought they would arrive at the same results with a number of children, they would find themselves very much mistaken. Every mother and every teacher ought to adapt their instructions to individuals, and not seek to adapt the individuals to the instructions. To succeed with children, it was necessary that teachers should become children themselves.

Some philosophers, in speaking of mankind at large, proposed certain motives for the guidance of all mankind; was it possible to suppose that the same motives could have the same effect on all? Neither young persons nor adults could be influenced by the same motives. If any teachers gave merely one or two motives to mankind at large, they could only influence those who liked such motives; others would not come near them nor listen to them. It was impossible that the same motives could dispose all mankind to action. Mothers well knew that with some children they must be kind, or they could do nothing with harshness. Some children had a great deal of cautiousness, were very timid, and had no self-esteem, and their fathers could do nothing with them; they could not read so well nor learn so easily if harshly spoken to. Others were of quite a different character, and if they were not treated with firmness and a little harshness nothing could be done with them. If a boy were very obstinate, and fond of the expressions "I will,"—"I will not," they should be very careful not to encourage such a disposition by too much mildness and indulgence. If certain feelings were defective, they ought to appeal to others which had more influence. They should imitate the great example of him who became all things to all men. Those who maintained that all motives had equal influence, did not understand human nature. Parents and teachers found that emulation and the love of approbation, and desire of reward had all great influence, but they were mistaken if they thought that all could be done by means of these feelings. They would be found very insufficient for the advance and improvement of the arts and sciences. He did not regret the great influence of these motives, because he was content to take human nature as it is. If the higher motives failed, still he would not give up the point, because he wished to obtain his object. He would begin with human nature, but if he did not succeed with the higher feelings, the religious or the moral, should he, therefore, give it up? He would rather appeal to the selfishness of his pupil, and see what could be found in him as an animal, since he could not succeed with him as a man. Since he could not be moved as a man, he ought

to be treated as an animal. He would not maintain that bodily punishment should never be employed under any circumstances. Practical teachers laid much stress on the loss of time attending any other mode of punishment;—they preferred appealing to the sensations at once, to making a deeper impression with what they considered a loss of time.

It was a very important matter that those who had the direction of either children or men should understand human nature; they should not apply merely to one motive, which might be perfect in one individual and very defective in others. If one or more motives were not sufficient, more should be added. It was generally to be observed, that those who improved the arts and sciences were not rewarded according to their merits, and this might discourage many who might be excited by the hopes of reward. In the direction of man, the feelings moral and religious must be carefully attended to: the intellect by itself would do very little; and if they expected all from it, they would find themselves very much mistaken. If they wished to improve man, they must have recourse to the requisite means. They might be sure that he was not against intellectual education, nor education of any kind; all that he contended for was, that they should suit it to the individuals. But he did object to education merely intellectual, if nothing else were done. The feelings were blind, but they were necessary as motives in combination with the intellect, and must always be attended to. If they cultivated the intellect only, and did not attend to the feelings, they might make men more accomplished, but they would not make them better. The intellect furnished the means of gratification to the feelings; a rascal who had good intellectual abilities did much more mischief than one who was deficient in that respect. History recorded many instances in which persons who had received an intellectual education had been ungrateful to their patrons and benefactors. If the feelings predominated, and were allowed to take the lead unrestrained, the intellect would be merely subservient to their gratification. Both should therefore be cultivated in harmony, and then there would be no occasion to complain of either. *(Applause.)*

In many countries a great error was committed in considering certain powers the criterion of intellect. In this country those children who had *individuality* and *language* large were considered clever; others who appeared deficient in these respects, and did not receive instruction with the same facility, were not to be considered as likely to make useless members of society, for they very often took the lead of those who were considered much cleverer than they. There were many who did not begin their education until they left school. *(Laughter and applause.)* They had perhaps been tied down to the study of things for which they had no disposition. He was not opposed to the study of the classics; all that he contended for was, that whilst they made classical scholars of those who had language strong, they should not consider this power, or any other, the criterion of other powers. Individuals might have certain powers in perfection, and be very defective in others, in which they were excelled by those who were inferior to them in other respects. Teachers were placed in a very disagreeable situation by the general error which prevailed on this subject. A parent wished his boy to become a classical scholar; the teacher took a great deal of trouble with his pupil but could not make him a classical scholar if he had not the requisite dispositions. In the same way the mother wished her daughter to become a good musician, but she would pay the master in vain if the pupil had not the requisite powers.

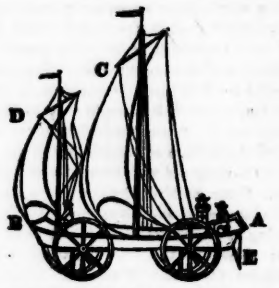
There would be much more happiness in the world if these things were properly attended to; and he was sure that men were never created to be miserable. In practical education, if they found a boy unsuccessful in one branch of study, why did they force him to continue it, when, perhaps, he might have the powers requisite for another very active? If they allowed the boy to cultivate the talents he possessed, even at the hours of recreation they would soon see with what advantage the system would be attended. It would be highly advantageous for mankind and also for the sciences themselves if individual capacities were understood and sufficiently attended to. There was talent enough in the world; many complained that there was too much. It would not do if every one was a genius, but there was a great deal of talent inactive and useless, from negligence or misdirection in education. Taking bodily and mental abilities together it would be found that there were men for every situation. The great object should be to cultivate the higher branches of talent, and where no talent existed to give education a different direction. This consideration was very important to society at large. In families there was little or no attention paid to the innateness of the powers; they would perhaps find several boys destined from the first to different professions according to the expectations and interest of their parents and friends; one must go into the navy, another into the church; both must go according to their destination, though perhaps they ought to change places, and the sailor take to the church and the clergyman to the navy. *(Applause.)* Thus, if they looked around them they would find very many unfit for the situations they held, and it was no wonder they should be so. It was a great and mischievous mistake for parents to judge of the feelings and inclinations of their children by their own. Every individual had a peculiar combination of feelings and intellectual powers, and his natural disposition should be taken into consideration more than any thing else.

Phrenology showed the great disparity of dispositions, and explained it; but, at all events, if they would have nothing to do with phrenology, they must be aware of this disparity, and in education they ought to act according to individual capacities. *(Applause.)* The proper motives should be employed, and the capacities of individuals ought to determine their professions. The modes he had enumerated must have great influence in modifying and improving the character and condition of man. If they wished to direct any being they must begin by attaining a knowledge of that being. The gardener, to be successful in his labours, must understand the nature of the plants he cultivates, and the properties of the soil. In the education of irrational animals they must begin with a knowledge of their nature. Why should not the same principles apply to the cultivation of man? *(Applause.)*

Dr. Spurzheim then concluded in nearly the following terms:—

"I have now arrived at the conclusion of these lectures: I thank those who have attended them from the beginning, and I feel much flattered by the patience, attention, and approbation with which my observations have been received. I hope that I have succeeded in convincing you and the public at large that the science of phrenology is not *quite* so nonsensical as it has been represented to be by its opponents and those who know nothing of it. If you meet with individuals opposed to the science, (even if they be medical men) ask them whether they are satisfied with the knowledge of the brain they already possess. Never pin your faith upon the sleeve of another; ask him if he has observed nature, and do not yourselves form an opinion but from an examination of nature. Commence the study, and go quietly and regularly on, comparing the different powers with their respective organs, and remembering that phrenology is not a mathematical science, and that the head is not to be measured according to its inches. If you see individual parts large, see whether the tendencies are not strong in the same proportion. Remember that you have numerous difficulties to contend with, but still be convinced with me, that the brain and its several parts were not made in vain. You will soon find, if you study the science, that the mental powers and the feelings depend upon the brain, and that they are manifested by the external organization. It is my wish, and I am sure you will all agree with me, that truth only should be the object of pursuit, and that it alone should prevail, for truth alone can be useful."

The Doctor's concluding remarks were listened to with the utmost silence and attention by his numerous and most respectable audience, and when they were concluded the applause was warm, loud, and long continued.



TO SAIL AS FAST WITH A FAIR WIND BY LAND AS BY WATER.

(From Hooper's Rational Recreations.)

This is to be effected by means of a sailing chariot, or boat fixed on four wheels; as A B, which is driven before the wind by the sails C D, and guided by the rudder E. In a chariot of this kind the wheels should be farther asunder, and the axle-trees longer, than in other carriages, to prevent overturning.

A machine of this sort was constructed in the last century by Stephinus, at Scheveling in Holland, and is celebrated by many writers. Its velocity with a strong wind is said to have been so great, that it would carry eight or ten persons from Scheveling to Putten, which are forty-two English miles distant, in two hours.

Carriages of this kind are said to be frequent in China; and in any wide, level country, must be sometimes both pleasant and profitable. The great inconvenience attending this machine is, that it can only go in the direction the wind blows: and even not then unless it blow strong; so that after you have got some way on your journey, if the wind should fail, or change, you must either proceed on foot, or go back.

The Housewife.

Composition to destroy Corns and Warts.—Take one part of fine resin, four of linseed oil, and add a little litharge, which are to be well boiled together. This preparation, when wanted for use, must be heated with the hand, and spread upon goldbeater's skin, or sticking-plaster, and applied to the corn so that its surface may be completely covered. At the end of five or six days the plaster is to be taken off, and the corn cut with a penknife as deeply as possible without touching the flesh, and in a few days the operation is to be repeated. The corn must be again well covered with the plaster; and at the end of one or two months it will disappear entirely.

To Correspondents.

THE FIRE EATER.—We shall next week have to make a few observations upon M. Chaubert, who is at present successfully employed in exhibiting to the London philosophers, chemists, and editors. We know some particulars respecting his performances which will perhaps surprise the aforesaid philosophers, &c.

THE GENIUS OF PERSEPOLIS shall appear next week.

ERRATA IN OUR LAST.—In *W. A.'s* letter, for *crationem* read *orationem*; for *vetical* read *radical*; and for *made* preferable read *much* preferable.

The lines on Parting, by *A Constant Reader*, are reserved for next week.

OPHTHALMIC PHENOMENON.—The communication of *H. S.* shall be published in the *Mercury* and *Kaleidoscope*.

H. S.'s solution to the question in the third number of our present volume, page 21, shall appear in our next.

Printed, published, and sold, *every Tuesday*, by EGERTON SMITH and JOHN SMITH, at their General Printing Establishment, Lord-street, Liverpool, where Printing in all its branches is executed in the best style, and on reasonable terms.